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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,748	12/26/2006	Klaus-Dieter Duch	2133.130USU	2540

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EXAMINER

NGUYEN, HUNG D

ART UNIT	PAPER NUMBER
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3742

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06/22/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,748	Applicant(s) DUCH ET AL.	
	Examiner HUNG NGUYEN	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 60 and 63-91 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 60 and 63-91 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/5/2010</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 60, 63-73, 75-78, 82-89 and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penberthy (US Pat. 3,409,725) in view of Hofmann et al. (US Pat. 6,235,075) (newly cited).**

3. Regarding claim 61 and 90, Penberthy discloses a unit for a conductively heatable melt, comprising: a tank having a wall (14) with a wall opening (12) therethrough, at least one electrode (20) passing through the wall opening so as to be immersed in the conductively heatable melt (16); and an apparatus (10) for reducing the local introduction of heating power into at least one region of the wall, wherein the apparatus comprises at least one shielding device (22) arranged in the at least one region of the conductively heatable melt (16) adjacent to the at least one electrode (20). Penberthy does not disclose a shielding basket having an interior, wherein the interior of the shielding basket reduces an electric field gradient that occurs in the conductively heatable melt immediately adjacent to the at least one electrode. Hofmann et al. discloses a shielding basket (14) having an interior, wherein the interior of the shielding basket reduces an electric field gradient that occurs in the conductively heatable melt immediately adjacent to the at least one electrode (21). It

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would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Penberthy, a shielding basket having an interior, wherein the interior of the shielding basket reduces an electric field gradient that occurs in the conductively heatable melt immediately adjacent to the at least one electrode, as taught by Hofmann et al., in order to protect the electrode.

4. Regarding claim 63, Hofmann et al. discloses the shielding basket (14) has a basket opening (at 15) through which the at least one electrode (21) passes, wherein the shielding basket has an axis define through the basket opening.

5. Regarding claim 64, Hofmann et al. discloses the basket opening (at 15) is arranged in an upper boundary of the shielding basket (14).

6. Regarding claim 65, Hofmann et al. discloses the shielding basket (14) is arranged coaxially with respect to the at least one electrode (21).

7. Regarding claim 66, Hofmann et al. discloses the shielding basket (14) is rotationally symmetrical in form.

8. Regarding claim 67, Hofmann et al. discloses the shielding basket (14) has an integrally formed upper boundary.

9. Regarding claim 68, Hofmann et al. discloses the shielding basket (14) has two rims connected by elements (wall of 14), wherein at least one of the two rims forms the upper boundary (at 15).

10. Regarding claim 69, Hofmann et al. discloses the elements (wall of 14) have a longitudinal axis, wherein the longitudinal axis is angled (α , Fig. 1) with respect to a surface of the wall that faces the conductively heatable melt (Col. 2, Lines 59-61).

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11. Regarding claims 70-71, Hofmann et al. discloses the angle (α , Fig. 1) has a value in the range from greater than 0° to less than or equal to 90° ; the angle has a value in the range from greater than or equal to 30° to less than or equal to 60° .

12. Regarding claim 72, Hofmann et al. discloses the shielding basket (14) is secured to the at least one electrode (21).

13. Regarding claim 73, Hofmann et al. discloses the shielding basket (14) is secured to the wall.

14. Regarding claims 75-76, Penberthy discloses the at least one electrode (20) has a length that is immersed in the conductively heatable melt (16). Hofmann discloses the shielding basket (14) has a height such that ratio of the length to the height has a value in the range from greater than or equal to 1 to less than or equal to 20; the ratio has a value in the range from greater than or equal to 2 to less than or equal to 5.

15. Regarding claims 77-78, Hofmann et al. discloses the shielding basket (14) has a basket radius and the at least one electrode (21) has an electrode radius such that a ratio of the basket radius to the electrode radius has a value in the range from greater than or equal to 2 to less than or equal to 15; the ratio has a value in the range from greater than or equal to 3 to less than or equal to 7.

16. Regarding claim 82, Hofmann et al. discloses the shielding basket (14) has an upper rim having a rim width that is greater than or equal to zero and less than or equal to the basket radius.

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17. Regarding claim 83-84, Hofmann et al. discloses the at least one electrode (21) is spaced from an inner boundary of the basket opening by a gap, the gap having a width in the range from greater than or equal to 0. Hofmann does not disclose the gap is less than or equal to 50 mm; less than or equal to 30 mm. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Hofmann, the gap is less than or equal to 50 mm; less than or equal to 30 mm, in order to have adequate space to adjust the electrode in and out of the basket.

18. Regarding claim 85, Hofmann et al. discloses the shielding basket (14) has a material thickness except for the material thickness in the range from greater than or equal to 5 mm to less than or equal to 50 mm. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Hofmann et al., the material thickness in the range from greater than or equal to 5 mm to less than or equal to 50 mm, in order to have adequate thickness to protect the electrode that not easy to break.

19. Regarding claims 86-87, Penberthy discloses the at least one electrode (20) is spaced from an inner boundary of the wall opening by a gap (12) except the gap having a width in the range from greater than or equal to 1 mm to less than or equal to 30 mm; and the width is in the range from greater than or equal to 2 mm to less than or equal to 5 mm. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Penberthy, the gap having a width in the range from greater than or equal to 1 mm to less than or equal to 30 mm; and the width is in the range from greater than or equal to 2 mm to less than or equal to 5

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mm, in order to have enough space for the molten glass to flow through which form an oxidation seal.

20. Regarding claims 88-89, Hofmann discloses the wall has a thickness at least in an area where the wall is in contact with the conductively heatable melt except the wall has a thickness at least in an area where the wall is in contact with the conductively heatable melt in the range from greater than or equal to 50 mm to less than or equal to 500 mm; in the range from greater than or equal to 100 mm to less than or equal to 300 mm. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Penberthy, the wall has a thickness at least in an area where the wall is in contact with the conductively heatable melt in the range from greater than or equal to 50 mm to less than or equal to 500 mm; in the range from greater than or equal to 100 mm to less than or equal to 300 mm, in order to have adequate thickness to protect the electrode that not easy to break.

21. Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over Penberthy (US Pat. 3,409,725) in view of Hofmann et al. (US Pat. 6,235,075) and further view of Fineo et al. (US Pat. 4,159,392) (previously cited).

22. Regarding claim 74, Penberthy/Hofmann disclose substantially all features of the claimed invention as set forth above **except** the shielding basket comprises a material selected from the group consisting of Mo, W, SnO.sub.2, at least one precious metal, an alloy of at least one of Mo, W, SnO.sub.2, and a precious metal, a high-temperature-resistant steel, and any combinations thereof. Fineo et al. discloses the primary electrode tip plate 29, horizontal lower electrode arm 27, elbow 25, arms

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23 and 19 are preferably made from a refractory metal having good electrical conductivity such as molybdenum, tungsten, tantalum, or alloys thereof (Col. 3, Lines 22-27). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Penberthy/Hofmann, the shielding basket comprises a material selected from the group consisting of Mo, W, SnO.sub.2, at least one precious metal, an alloy of at least one of Mo, W, SnO.sub.2, and a precious metal, a high-temperature-resistant steel, and any combinations thereof, as taught by Fineo et al., for the purpose of having the shielding basket made by a strong metal that can withstand the high temperatures and the erosion or deterioration which normally results from the flow of molten glass.

23. Claims 79-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penberthy (US Pat. 3,409,725) in view of Hofmann et al. (US Pat. 6,235,075) and further view of Gillman (US Pat. 4,468,779) (previously cited).

24. Regarding claims 79-81, Penberthy/Hofmann disclose substantially all features of the claimed invention as set forth above **except** the at least one electrode comprises two electrodes spaced from one another by a distance and the shielding basket has a basket radius such that a ratio of the distance to the basket radius has a value in the range from greater than or equal to 3 to less than or equal to 500; and the ratio has a value in the range from greater than or equal to 20 to less than or equal to 80. Gillman discloses two electrodes (12' and 14', Fig. 4) spaced from one another by a distance and the shielding basket (48', Fig. 4) has a basket radius such that a ratio of the distance to the basket radius has a value in the range from greater than or

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equal to 3 to less than or equal to 500. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Penberthy/Hofmann, the at least one electrode comprises two electrodes spaced from one another by a distance and the shielding basket has a basket radius such that a ratio of the distance to the basket radius has a value in the range from greater than or equal to 3 to less than or equal to 500; and the ratio has a value in the range from greater than or equal to 20 to less than or equal to 80, as taught by Gillman, in order to have heat distribution evenly depends on the size of the furnace.

25. Claim 91 is rejected under 35 U.S.C. 103(a) as being unpatentable over Penberthy (US Pat. 3,409,725) in view of Hofmann et al. (US Pat. 6,235,075) and Geffcken et al. (US Pat. 2,749,379) (newly cited).

26. Regarding claim 91, Penberthy discloses unit for a conductively heatable melt, comprising: a tank having a wall (14) with a wall opening (12) therethrough; an electrode (20) passing through the wall opening so as to be immersed in the conductively heatable melt (16) within the tank. Penberthy does not disclose a shielding basket immersed in the conductively heatable melt within the tank, the shielding basket having a basket opening and an interior, the electrode passing through the interior and the basket opening, the basket opening having an inner boundary arranged at a predetermined distance from an outer boundary of the electrode; and an electrical connection passing through the wall and electrically connecting the shielding basket to an outer region of the electrode. Hofmann et al. discloses a shielding basket (14) arranged in the region of the conductively heatable

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melt within the tank, the shielding basket (14) having a basket opening and an interior, the electrode (21) passing through the interior and the basket opening, the basket opening having an inner boundary arranged at a predetermined distance from an outer boundary of the electrode (21). Geffcken et al. discloses an electrical (7) connection passing through the wall and electrically connecting the pot (4) to an outer region of the electrode (2). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Penberthy, a shielding basket immersed in the conductively heatable melt within the tank, the shielding basket having a basket opening and an interior, the electrode passing through the interior and the basket opening, the basket opening having an inner boundary arranged at a predetermined distance from an outer boundary of the electrode; as taught by Hoffmann, in order to protect the electrode in the furnace that have a bottom electrode and an electrical connection passing through the wall and electrically connecting the shielding basket to an outer region of the electrode, as taught by Geffcken et al., in order to eliminate the electrolytic decomposition of the melt.

27. Applicant's arguments with respect to claim 61-90 have been considered but are moot in view of the new ground(s) of rejection.

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG NGUYEN whose telephone number is (571)270-7828. The examiner can normally be reached on Monday-Friday, 9M-6PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HUNG NGUYEN/
Examiner, Art Unit 3742
6/19/2010
/TU B HOANG/

Supervisory Patent Examiner, Art Unit 3742